THE IMPACT OF MONETARY UNION ON REGIONAL INTEGRATION IN WEST AFRICA

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THE IMPACT OF MONETARY UNION ON REGIONAL INTEGRATION IN WEST AFRICA

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LIST OF ABBREVIATIONS

AfDB	Africa Development Bank
AR	Autoregressive
ARDL	Autoregressive Distributive Lag Model
CFA	French Colonies I Africa Franc
CFIS	Coordinated Financial Statistics of the International Monetary Fund
CMAC	Economic and Monetary Community of Central Africa
CU	Currency Union
CUSUM	Cumulative sum test
CUSUMsq	Cumulative Sum of Square test
DOTS	Direction of Trade Statistics
EA	Eastern Africa
ECOWAS	Economic of West African States
EM	Expectation and Maximum
EMCP	ECOWAS Monetary Cooperation programme
EMU	European Monetary UnionFAVAR Factor Augmented VAR
GDP	Gross Domestic Product
G-PPP	Generalized Purchasing Power Parity
GMM	Generalized Method of the Moment
IMF	International Monetary Fund
LM	Langrange multiplier
LSDV	Least Squares with Dummy Variables
MG	Mean Group
OCA	Optimum Currency Area
OLS	Ordinary Least squares
PCGDP	Per capita GDP
PMG	Pooled Mean Group
PPML	Poisson Pseudo-Maximum Likelihood
PS	Political stability
RESET	Ramsey Regression Equation Specification Test
RGDP	Real Gross Domestic Products
ROL	Rule of Law
RTA	Regional Trade Agreement
SVAR	Structural Vector Autoregressive Models
TO	Trade Openness
VAR	Vector Autoregressive Models
VIF	Variance Inflation Factor
WACMIC	West African Capital Market Integration Council
WAEMU	West African Economic Monetary Union
WAMZ	West African Monetary Zone
WASH	West African Clearing House

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KESAN KESATUAN KEWANGAN TERHADAP INTEGRASI SERANTAU DI AFRIKA BARAT

ABSTRAK

Kajian ini mengkaji kesan kesatuan kewangan ke atas integrasi serantau di dalam panel sampel 16 negara Afrika Barat sepanjang tempoh tahun 1980 – 2020 dengan menggunakan model faktor dinamik bersama anggaran Driscoll-Kraay dan panel model autoregressive distributed lag. Pertama, kajian ini meneliti kebolehlaksanaan mata wang bersama di rantau Afrika Barat. Kedua, kajian ini menganalisis kesan mata wang bersama terhadap integrasi perdagangan antara wilayah di rantau Afrika Barat. Ketiga, kajian ini menilai kesan mata wang bersama terhadap integrasi kewangan di rantau Afrika Barat. Bukti daripada model faktor dinamik mendedahkan bahawa Guinea, Guinea Bissau, Mali, Sierra Leone, dan Togo memberi tindak balas yang sama terhadap faktor wilayah dan idiosinkratik di rantau Afrika Barat. Oleh itu, negara-negara ini merupakan negara teras bagi kesatuan yang dicadangkan. Anggaran Driscoll-Kraay (D-K) menunjukkan bahawa semua pemboleh ubah graviti (keluaran dalam negara kasar, populasi, dan jarak) adalah selaras dengan jangkaan priori; replika kesatuan mata wang menghasilkan hubungan positif dengan integrasi perdagangan antara wilayah; peningkatan kadar pertukaran berkesan nyata meningkatkan prestasi perdagangan dan interaksi mata wang bersama serta kualiti institusi menghasilkan kesan positif ke atas aliran perdagangan antara wilayah di kalangan negara-negara di rantau Afrika Barat. Antara indeks kualiti institusi yang disisihkan, kedaulatan undang-undang, dan kestabilan politik mempunyai kesan yang signifikan terhadap aliran perdagangan. Kedaulatan undang-undang mempengaruhi aliran perdagangan secara positif manakala kestabilan politik mempengaruhi aliran

perdagangan secara negatif. Anggaran Pseudo Poisson Maximum Likelihood menghasilkan keteguhan hasil D-K. Anggaran kumpulan min terkumpul menunjukkan bahawa mata wang bersama mempengaruhi integrasi kewangan secara positif di rantau Afrika Barat. Tahap pertumbuhan ekonomi, integrasi perdagangan serantau, dan kedalaman pasaran kewangan meningkatkan integrasi kewangan, manakala keterpencilan dan sebaran kadar faedah mempengaruhi integrasi kewangan secara negatif. Walau bagaimanapun, istilah interaktif kedalaman pasaran kewangan dan mata wang memberi kesan negatif kepada tahap integrasi pasaran kewangan di rantau Afrika Barat. Berdasarkan penemuan ini, Guinea, Guinea Bissau, Mali, Liberia, Sierra-Leone, dan Togo yang merupakan negara-negara teras harus memulakan kesatuan mata wang yang dicadangkan, manakala negara-negara pinggiran menyelaraskan dasar-dasar dan institusi untuk memenuhi negara-negara teras. Selain itu, untuk mengekalkan kesan kesatuan mata wang bersama ke atas perdagangan serantau dan integrasi kewangan di Afrika Barat, pembangunan pasaran kewangan dan kualiti institusi bagi semua 16 negara di rantau ini harus diberi keutamaan.

THE IMPACT OF MONETARY UNION ON REGIONAL INTEGRATION IN WEST AFRICA

ABSTRACT

This study investigates the effect of monetary union on regional integrations in a panel sample of 16 West African countries over the period of 1980 – 2020 using a dynamic factor model along with the estimates of Driscoll-Kraay and panel autoregressive distributive lag model. Firstly, it examines the feasibility of a common currency in the West African region. Secondly, it analyzes the effect of common currency on the intra-regional trade integration in the West African region. Thirdly, it assesses the effect of common currency on the financial integration in the West African region. Evidence from the dynamic factor model reveal that Guinea, Guinea Bissau, Mali, Sierra Leone, and Togo respond similarly to common regional and idiosyncratic factors in the West African region. Thus, these countries constitute the core countries for the proposed union. The estimates of Driscoll-Kraay (D-K) show that all the gravity variables (gross domestic product, population and distance) are in line with a priori expectations; currency union dummy produced a positive association with intra-regional trade integrations; real effective exchange rate appreciation boosts trade performance and the interaction of common currency and institutional quality produced a positive impact on intra-regional trade flows among the countries in the West African region. Among the disaggregated institutional quality index, rule of law and political stability have a significant impact on trade-flows. Rule of law influenced trade flows positively while political stability influenced trade flows negatively. The Pseudo Poisson Maximum Likelihood estimates produced a robustness of the D-K results. The estimates of the pooled mean group show that common currency positively

influenced financial integration in the West African region. The level of economic growth, regional trade integrations, and financial market depth enhanced financial integrations, while remoteness and interest rate spread negatively influenced financial integrations. However, the interactive term of financial market depth and currency negatively affected the level of financial market integration in the West African region. Based on these findings, Guinea, Guinea Bissau, Mali, Liberia, Sierra-Leone and Togo, which constitutes the core countries should kick start the proposed currency union, while the periphery countries harmonise policies and institutions to meet the core countries. Also, to sustain the common currency union effect on intra-regional trade and financial integrations in West Africa, the development of financial markets and institutional qualities of all the 16 countries in the region should be accorded utmost priority.

CHAPTER 1

INTRODUCTION

1.1 Background to the Study

The importance of monetary union in the economic integration of a region cannot be overemphasized. This is because a successful monetary union or currency union is expected to increase intra-regional trade, boost the level of investment, and also lead to convergence of economic conditions of all member countries (Bae & Bailey, 2011). Mundell (1961), who pioneers the theory of Optimal Currency Area (OCA), defines monetary union as a region where the exchange rate of all the countries within the region is fixed, where a single central bank coordinates the monetary activities with a single currency and other monetary instruments, and where there is internal mobility of resources (labour and capital)[1]. McKinnon (1963) also sees a regional monetary union as a region where uniform monetary and fiscal policies are used to address conflicting macroeconomic issues among the member states.

Regional integrations on the other hand is seen as a voluntary process that involves linking of economic and political domains of independent countries to the extent that authority over key areas of national policy is shifted towards the supranational level (Mattli, 1999). This further implies how inter-linkages of independent countries within a region through trade and finance could improve the growth and social economic welfare of countries involved

Harvey and Cushing (2015) summarized three important benefits of monetary union as; a good and successful monetary union enables monetary and fiscal policies of

[1] This implies all countries within a monetary union will surrender their monetary autonomy and cannot finance fiscal deficit with seigniorage.

countries adopting the same currency to respond to symmetric external shocks. Also, factor mobility within the monetary region makes it easier for shocks to dissipate quickly and the integration of the financial market as a result of monetary union redistributes resources between the surplus and the deficit countries in the region.

A region is considered an OCA if the benefit of joining the union is more than the cost. The major cost of joining the union is the inability to use the nominal interest rate to stabilize the economy due to lack of autonomy of the national central banks (Hudec, 2017). While analysing the cost and benefits of monetary union, Olorunrinu (2020) identified thirteen benefits of monetary union, including an increase in trade and investment flows; a significant reduction in intra-regional trade transactions costs; improved resource allocation efficiency; an outward shift in national production capability frontiers; increased seignorage gains; improves resource savings by pooling foreign reserves; enhanced fiscal discipline; market expansion; chances for mergers and acquisitions and company re-engineering; competition in larger money and capital markets; improved macroeconomic policy coordination; and economic growth promotion, and contribute to financial deepening.The above features, among others, constitute the optimal currency criteria theory by Mundell (1961).

Before countries could form a monetary union, the union must set up some convergence criteria for all the members, have a common market, and ensure a free trade agreement at zero cost within the region. These Optimum Currency Area (OCA) criteria vary across different monetary blocs. However, common currency criteria for different economic blocs are being guided by the OCA of Mundell. One of the most successful monetary unions whose other monetary blocs see as a reference point is the European Monetary Union (EMU), where a Euro is a common currency used among the countries within the region. The Maastricht treaty of 1991 serves as the main pillar

to the formation of the EMU, where phases and convergence criteria for joining the union were clearly stated. The euro was adopted in the year 1999, immediately after the global financial crisis. One of the earliest studies that examine the impact of the euro on the regional integration after the euro was fully adopted is the work of Lane (2006), who shows that the adoption of the euro first led to relative wide inflation differentials in the region. For instance, in the year 2000, Germany and Ireland had a 1.5 percent and 5.6 percent inflation rate, respectively, which is different from what was expected before euro was introduced. Although, his study reveals that the adoption of the euro improved intra-regional trade integration, financial integration and increases factor mobility within the region.

In Africa, Monetary union or common currency could be traced back to the pre-independence period of most African countries. The Anglophone and Francophone-speaking countries in the West African region adopt the currencies of their respective colonial masters. All Anglophone countries changed from using common currencies to their respective national currencies immediately after they attained political independence (Sylla & Samba, 2019). On the other hand, the Francophone nations still peg their French Colonies I Africa Franc (CFA) with the currency of their colonial country (France) and now the euro. The Francophone countries in the West African region still keep about 50% of their foreign reserves in the French treasury. Hence, the Francophone countries in the West African region constitute a monetary union called the West African Economic Monetary Union (WAEMU).

The formation of the Economic of West African States (ECOWAS) in 1975 triggered creating a monetary union in the whole region. The ECOWAS created a West African Clearing House (WACH) to facilitate the monetary union process within the

region (Harvey and Cushing 2015). The ECOWAS Monetary Cooperation Programme (EMCP) was also launched in 1987 to work on how to unify the whole region with a common currency called ECO[2]. The idea later changed to forming a separate West African Monetary Zone (WAMZ) for the Anglophone counties to ensure convergence of the WAMZ to make it easier for both WAEMU and WAMZ to adopt a single currency.

Furthermore, in a move to create a monetary union in the West African region, primary and secondary criteria for joining the union were set up. The primary criteria ensure the convergence of the economies with respect to their response to symmetric shocks, while the secondary criteria ensure the fiscal convergence of countries intending to join the union (Harvey & Cushing, 2015). However, the number of countries that meet the primary criteria varies in the existing literature. For instance, the findings of Harvey and Cushing (2015) showed that most WAMZ countries do not have common sources of shocks as of the end of the year 2014. The study further shows that only Ghana and Gambia have similar symmetric shocks and could join the current WAEMU to form a union. Debrum *et al*. (2005) opined that asymmetric shocks are not an impediment for the adoption of a common currency, but the fiscal heterogeneity among the West African countries, especially Nigeria, whose fiscal obligation is far above the other countries in the region and believe that countries like Guinea, Gambia and Sierra-Leone could join the WAEMU countries to form a union. The study of Qureshi and Tsangarides (2008) found that all countries in WAMZ have symmetric shocks with the WAEMU countries except Nigeria and Ghana. The question of whether a region could

[2] The acronym ECO stands for the proposed name of the common currency that WAMZ intends to adopt in the framework of ECOWAS.

adopt a common currency with some member states not meeting all the criteria was answered in the study of Lane (2006), who shows that countries like Belgium and Italy with high debt profiles before the adoption of the euro were allowed to join the monetary union despite not fulfilling all the criteria.

Furthermore, some studies have been done on the impact of monetary union on the integration of some regions; Buigut and Valev (2005) for the East African region, Bae and Bailey (2011) for the Latin American region, Hassan and Nakibullah (2008) for Gulf region, Vinokurov and Demidenko (2017) for Eurasia, Lane (2006) for Europe, Nchake, Edwards and Rankin (2018) for Southern Africa. However, the effect of monetary union on regional integration in West Africa has not been thoroughly explored. The few studies that analyzed the role of monetary union in West Africa only checked whether the region is a common currency area using ordinary correlation coefficients of key macroeconomic indicators of countries, Structural Vector Autoregressive Models (SVAR), Factor augmented VAR (FAVAR) or clustering analysis to analyse the aggregate demand and supply shocks of all countries at the period when the region was not set for the union.

However, their findings produced a mixed result (Debrum *et al*. 2005; Harvey & Cushing, 2015). Some possible differences in their findings may be due to the econometric techniques used to check the degree of individual countries' response to symmetric shocks, nature of variables used, and the range of data or lack of seriousness and readiness among the countries in the region. With West African countries intention to adopt the Eco currency in January 2020, this study will not only examine how business cycle fluctuations of West African countries respond to common and idiosyncratic shocks but also examine how common currency, economic and

institutional factors affect the level of regional integration in the West African region vis-a-vis the intra-regional trade effect and the financial market integrations.

The Dynamic Factor Model which shows how common factors and idiosyncratic factor influences the synchronization of the business cycle of all countries will be used to determine the number of countries that could form the proposed monetary union in the West African region. The trade effect will reveal if monetary union improves trade and further intra-regional integration among members considering the state of institutional quality of countries in the region. This is imperative as we are not sure whether the trade effect of a common currency will still hold in a region that has poor institutional qualities, such as the West African region. Also, apart from economic factors, the state of insecurity, corruption, political instability in most of the West African countries could serve as a major threat to the formation of the proposed union.

The financial effect of monetary union is also germane because an integrated financial market is required for efficient and effective monetary policy because it ensures an even distribution of liquidity and similar short-term interest rate levels across the currency zone. A well-integrated financial market may also promote financial stability by allowing financial risks to be easily shared across countries and also provides a risk-sharing mechanism for risks caused by negative shocks. Thus, a negative shock in one country could be mitigated by compensating variations in other countries within the region.

The exact mechanism through which currency union affects the level of financial integration is unclear, which calls for major concern considering the state of financial development in the region, which has increased marginally over the years but

is still considered small and undiversified when compared to the advanced economies. Interacting the level of financial development depth which captures both monetary and stock market aspects of financial development on currency union-financial integration, could be an opener on what to do to ensure sustainable financial integration in the region.

1.2 Problem Statement

Several attempts have been made to form a currency union in the West African region. In July 1991, fifteen countries in the region ratified a treaty to establish an economic union that will adopt common economic, financial, social, and cultural policies, as well as the formation of a monetary union where all countries will adopt a single currency. It is believed that monetary union will boost the West African region's financial, economic, and regional integration. Some researchers believe the region is not a common currency because virtually all countries in the WAMZ area have not satisfied all the OCA criteria (Harvey & Cushing 2015). Some of the existing studies believe the heterogeneity among countries within the region is a major factor that will make the common currency impossible (Debrum *et al*. 2005). It is not clear whether the un-attainment of the OCA criteria is the major reason for delaying the adoption of Eco currency in the West African region.

The year 2020 is another deadline fixed for the adoption of Eco currency in the West African region. This deadline has not been met up till the year 2021. Whichever way, with the recent growth in the GDP per capita in the region, establishment of financial policies and introduction of some free trade agreements to improve the degree of openness in the region, there is a need to evaluate the effect of the common currency on the financial integration, trade integration and also see if the countries in the region

responds to symmetric shocks. Previous studies used the correlations of aggregate demand and aggregate supply shocks generated from a structural vector autoregressive model to see the structure (symmetric shocks) of the countries in the region. Apart from this, some studies consider the level of business synchronization of West African countries with ordinary correlation coefficients of GDP, while some also used the level of inflation differentials to assess the readiness of West African countries for a common currency. However, the result of these studies has been mixed in terms of the degree of responsiveness of countries to symmetric shocks. The mixture in their findings may be due to the technique used by some of the previous studies.

The use of basic correlation coefficient to determine the OCA criteria has two major shortcomings: it fails to distinguish between idiosyncratic and common shocks, as well as the dynamics of co-movement (Nzimande & Ngalawa, 2017b), while SVAR has been criticized for its inability to handle large information set. Hence, there is a need to use a more reliable technique (such as Dynamic Factor Model) that is similar but superior to SVAR that can handle large information sets, which also distinguishes between measurement errors and other individual country specific disturbances from structural macroeconomic shocks, which are common among variables. Most previous studies that used a dynamic factor model to determine the optimum currency area focused on developed countries and developed and developing countries (Aleshina *et al*. 2002; Kabundi & Loots 2007). Houssa (2008), who used dynamic factors to determine the optimum currency area in the West African region, only considered regional factors and used annual data between the years 1966-2000. This study considers both regional factors and idiosyncratic factors using data between 1981 and 2020. The inclusion of idiosyncratic factors will enable this study to identify the country-specific factors driving business cycles synchronization in the West African

region. Also, the common regional factor, which will be derived by estimating a principal component analysis using the primary convergence criteria, will show how the common factor responds to business cycle synchronization in West Africa.

Furthermore, intra-regional trade in the region is low compared to other regions (Onyekwena & Oloko, 2016). Also, some countries within the region have been characterized among the developing countries globally for a long period. It is believed and hypothesized that currency unions will boost the rate of regional trade. Since 1999, when the euro was introduced as a common currency among 12 European countries, there has been a disagreement in the field of international macroeconomics on the estimate of monetary union effect on intra-regional trade. Rose (2000) believed the euro effect on intra-regional trade within Europe is three times higher than non-Europe (Rose effect)[3]. Some studies also found positive but reduced estimates to Rose (Yeyati 2003; Alejandro *et al*. 2003; Campbell & Davis 2013). Some studies found the common currency effect on trade to be insignificance Larch, Wanner and Yotov (2018), Berger and Nitch (2008), and Mika and Zymek (2018), while some believed the relationship to be non-linear. The mixed result in previous studies is likely to discourage countries who want to join a common currency as they are not sure of its effect on bilateral trade within the region.

Most of the studies that examined the trade effect of common currency area in West Africa focus much on the CFA franc zone and found a positive association

[3] Rose (2000) is one of the prominent studies that first empirically examined the effect of common currency on regional trade after the adoption of Euro currency. The study found that countries that adopt the same currency trade three times higher, which generated controversies among scholars. Using the same data set with Rose (2000), some scholars found that the Rose effect of common currency on trade was hover hyped.

between common currency and bi-lateral trade (Fielding & Shields, 2005); Adam & Chaudhry, 2014). The effect of currency union on intra-regional trade between CFA franc zone countries and non- franc zone that intends to form a common currency area has not been adequately explored. Hence, there is a need to examine the real effect of a currency union on trade flows in a region about to form a common currency with less institutional-quality performance like West Africa. This study will use the bilateral trade statistics within the region to see the real effect of a common currency on intra-regional trade as well as the role of institutional factors in the currency union-trade relations in the West African region.

Although, there is no unanimous consensus on the measurement of financial integration in the existing literature (Padhan & Prabheesh, 2021). Scholars have measured financial integration on either of the following financial segments; money market, stock market, bond, and securities segments. To the best of the researcher's knowledge, the effect of monetary union on financial integration has not been thoroughly explored may be due to the low level of financial development or paucity of financial integration data in the region compared to other regions in the world. Hence, there is a need to see if the currency union improves financial integration in the region considering the state of financial development depth of the region.

1.3 Research Questions

The following are the research questions this study intends to address

1. Is West Africa an optimum currency area?
2. How does currency union affect the intra-regional trade in West Africa?
3. How does currency union affect the financial integration in West Africa?

1.4 Objectives of the Study

The main objective of this study is to examine the effect of monetary union on regional integration in the West African region. The specific objectives are;

1. To investigate whether the West African region is an optimal currency area
2. To examine the effect of currency union on intra-regional trade integration in the West African region
3. To examine the effect of currency union on financial integration in the West African region.

1.5 Significance of the Study

Understanding whether countries within a region could form a monetary union is essential because countries experiencing economic recession will require an expansionary monetary policy, whereas those in an expansionary require a contractionary monetary policy in order to deal with inflationary pressures. Hence, synchronization of business cycles eliminates this challenge, which is why countries are more willing to surrender their monetary policy tool to a single central bank if their business cycles are synchronized.

It will also show whether business cycle synchronization in West Africa is influenced by regional shocks or country-specific shocks, or both. This will suggest the countries that are fully ready for the common currency since there is no specific number of countries that can kick-start the adoption of the single currency.

Furthermore, it is hypothesized that common currency in a region will increase intra-regional trade. Hence, considering the CFA franc currency which is used by most countries in the West African region, this study will show the extent to which the common currency will boost the intra-regional trade among WAEMU and non-

WAEMU countries in West Africa. Also, the interaction of aggregate with currency union, and disaggregated institutional quality index will serve as a reference point on how to adjust and formulate some political policies within the region to improve the level of intra-regional trade.

The role of financial integration will show the real flow of financial resources in the region. It will explain the extent to which monetary union influences stock market integration and the availability of funds within the region. The study will also reveal how trade linkages, financial development depth, and institutions quality index within the region have actually influenced the financial integration in the West African region. The study will also guide some regions that are on the verge of forming a currency union on what policies and decisions to make.

1.6 Scope of the Study

This study focuses on the effect of monetary union on regional integration in the West Africa region. The study area is chosen because the region has an existing economic union that is in the stage of unifying the whole region with a single currency. Previous researchers have analyzed the macroeconomic convergence of the countries within the region, while some analyzed the criteria for adopting a common currency in the region. To the best of our knowledge, research on the effect of a common currency on financial and intra-regional integration in the West African region is rare at this crucial time when the region has set a date for the adoption of a common currency.

This study will use panel data ranging over the period 1980 - 2020. This period is chosen because of the unavailability of data for some of the variables prior to 1980. Contrary to the existing studies, this study will use a dynamic factor model to see whether West

African countries' business cycle is synchronized or not and see if it is being influenced by regional shocks and country-specific shocks.

This study will also use Driscoll-Kraay standard error estimator to examine the effect of a common currency on intra-regional trade and see if the interaction of institutional quality changed the assumed effect of currency union on trade. This method is chosen in order to account for most problems associated with macro-panel analysis, such as heteroskedasticity, cross-sectional dependence, and autocorrelation. Lastly the estimates of the pooled mean group, mean group, and dynamic fixed effect in the form of panel autoregressive distributive lag (PARDL) will be used to examine the effect of currency union on financial market integrations in the West African region.

1.7 Definition of Terms

This section defines the concept of monetary union, regional integrations vis-à-vis trade, and financial integrations, and how they relate with one another in line with economic theories.

1.7.1 Monetary Union

The term “Monetary Union” has been defined by different scholars. The most agreed meaning of monetary union in the existing literature is the definition given by Mundell (1961), Mckinnon (1963), Gandolfo (1992), among others. They all agreed that a monetary union is often called monetary integration in a community where a single currency is adopted, with a common central bank (Tavlas, 1993). Thus, the use of interest rate is consigned to the region and exercised solely by its sole central bank, leaving no monetary autonomy for the individual country’s central bank. It also means that the regional central bank is solely responsible for exchange rate policy with other

foreign currencies, and the balance of payment with the rest of the world of its member countries must be assigned to the under its custodian. Hence, the regional central banks controls the pool of the entire regions' foreign reserves.

1.7.2 Intra-Regional Trade Integration

Intra-regional trade is one of the components of regional integration, which refers to a form of trade that focuses on the economic exchange of goods and services between countries of the same region or economic zone (Adam & Chaudhry 2014).

1.7.3 Financial Market Integration

Financial integration is another component of regional integration, which involves inter-linkages of financial markets in a region or global economies (Nardo *et al.* 2021). Although, there is no unanimous definition and measures of financial integration in the existing literature. Some view integrations from the angle of household savings and investment across boarder (Feldstein & Horioka, 1980). King *et al.* (1994) view financial market integration as the co-movement of the stock market price of volume across borders. Adam *et al*. (2002) viewed financial integration from the angle of the law of one price, which assumes that financial securities should be traded in one price irrespective of where it is being traded. However, this study defines and measures financial market integration by dividing the aggregate foreign assets and liabilities by its gross domestic product and by taking the natural logarithms of the products of the financial integrations of countries *i* and *j* at time *t* in line with Wälti (2011).

1.8 Organization of the Study

This thesis consists of five chapters; chapter one presents the background to the study, the overview of West African countries, research problems, research objectives and questions, the significance of the study, the scope of the study and definition of key terms. Chapter two presents the economic overview of the West African countries. Chapter three presents the review of the literature with respect to the effect of monetary union on financial integration, the effect of monetary union on intra-regional trade, and the economic impact of monetary union. Theoretical and conceptual issues will also be presented in chapter three. Chapter four presents the methodology to be employed for the three specific objectives of the study. Chapter five presents and analyses the results, while chapter six will consist summary, conclusion, suggestions for future studies, and policy implications.

CHAPTER 2

ECONOMIC OVERVIEW OF THE WEST AFRICAN COUNTRIES

2.1 Introduction

This chapter presents an overview of the economy of West African countries. It provides some key background information on demographic attributes, trade, and financial indicators, institutional quality index, and some primary optimum currency area criteria indicators of the sub-region to identify changes in their trends.

2.2 Structure of West African Region

2.2.1 Demographic Attributes of West Africa

The West African region is found in the western half of Sub-Saharan Africa. The southern portion of the continent's bulge, which stretches westward to the Atlantic Ocean, falls inside this region. This region is divided by the African Transition Zone, which runs along the southern edge of the Sahara Desert. Two of the region's most noteworthy features are the Sahara Desert and the Niger River. The Cameroon Highlands go along the eastern borders of Nigeria and Cameroon. The Nile River, which stretches 4,100 miles, is Africa's longest, while the Congo River, which stretches 2,922 miles, is the continent's second-longest. The Niger River runs 2,600 miles from the Guinea Highlands to the Atlantic Ocean in the Gulf of Guinea, making it Africa's third-longest river.

The main economic activities of the region are subsistence agriculture. Varying amounts of minerals, oil, and diamonds are also extracted in West Africa. The region is blessed with a large number of independent countries that share similar economic

qualities. The region has sixteen countries, of which ten are Francophone, five Anglophone, and one Portuguese-speaking country, respectively. The francophone countries include Burkina Faso, Benin, Cote D' voire, Guinea, Guniea-Bissau, Mali, Mauritania, Niger, Togo, and Senegal. The Anglophone countries are Nigeria,Ghana, Liberia, Gambia, and Sierra Leone, while Cape Verde is the only Portuguese-speaking country in the region (AfDB, 2019). The region's total land area (in kilometer square) is 6,146,130sq km, with an estimated population of 381,196,698million in 2018. Nigeria is the most populous country in the region, with an estimated population of 195,874,740 million. Cape Verde is the least populous and smallest in terms of land area, with an estimated population of 543767 thousand 4,030 square kilometers. Eight out of the sixteen countries in the region adopt French Colonies I Africa Franc (CFA) as their currency, where the other eight use their national currencies. Figure 2.1 presents the geographical map of the West African region, while Table 2.1 presents the population, land size, official language, and the national currencies of West African countries.

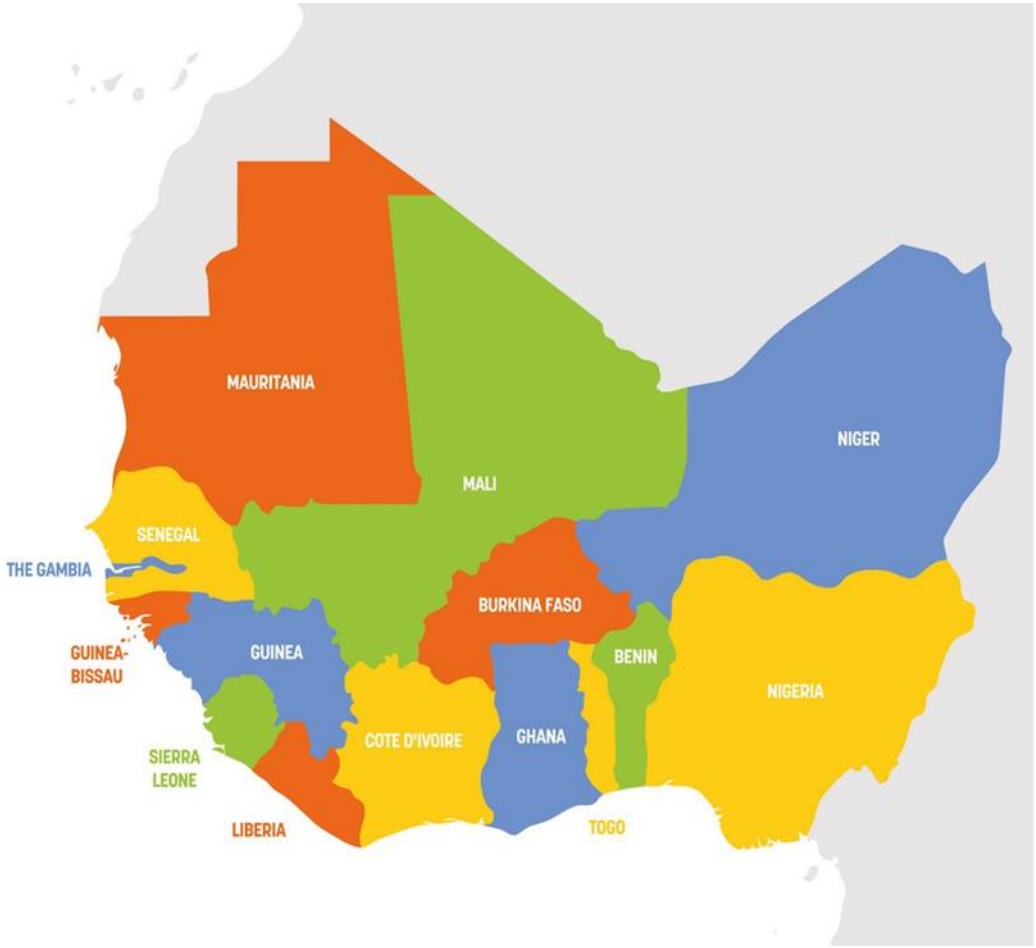

Figure 2.1 Map of West Africa

Table 2.1 Demographic attributes of West African Countries

Country	Population	Land size (Km. Sq)	Language	Nat. currency
Benin	11,485,048	114,760	French	CFA
Burkina Faso	19,751,535	274,220	French	CFA
Cabo Verde	543,767	4,030	Portuguese	CVE
CIV	25,069,229	322,460	French	CFA
Gambia	2,280,102	11,300	English	dalasi
Ghana	29,767,108	238,540	English	Cedi
Guinea	12,414,318	245,860	French	CFA
Guinea-B	1,874,309	36,130	French	CFA
Liberia	4,818,977	111,370	English	LRD
Mali	19,077,690	1,240,190	French	CFA
Niger	22,442,948	1,267,000	French	CFA
Nigeria	195,874,740	923,770	English	Naira
Senegal	15,854,360	196,710	French	CFA
Seirra-L	7,650,154	72,300	English	Le
Togo	7,889,094	56,790	French	CFA
Mauritania	4,403,319	1,030,700	French	MRU

Sources: World Bank Indicators (2019) of the World Bank

2.2.2 GDP per capita and Economic Growth of West Africa

The GDP per capita is one of the measures of the economic performance of a nation. The economic performance of the West African countries has been diverse for years. This is because the region has some less developed countries that rely on some buoyant economies in the region, like Nigeria and Cote D'Ivoire. In 2018, the Gross Domestic Product (GDP) per capita in West Africa ranged from $452 in Niger and $3678 in Cabo Verde, the smallest country in the region in terms of population and land size and also one of the region's middle- income countries. The growth of the region's GDP per capita to a larger extent depends on Nigeria's GDP growth because Nigeria is the largest economy in the region, accounting for almost 70 percent of West African GDP, which also happens to be the populous country in the region. The region's growth rate declined in 2016-2017 when Nigeria experienced an economic recession and later rose after Nigeria recovers from the economic recession. The region's real GDP increased from 2.7 percent to 3.3 percent between the years 2017 and 2018.

On a country basis, nine West African countries had at least a five percent growth rate between 2017 and 2018. Among them are Cote d'Ivoire, Mali, Senegal, and Guinea, who have maintained that rate a few years before 2017. Apart from agriculture, manufacturing and mining contribute to the steady growth rate in the five fast-growing economies in the West African region. For instance, the private sector renewal dynamism in Cote d'Ivoire had rebounded her manufacturing sector. Also, Guinea, the world's largest iron ore deposit and one of the world's highest bauxite reserves, has experienced steady growth due to the mining sector's contribution to GDP. The

development of oil in Niger contributes to her steady growth in recent times, while the robust export of zircon in Senegal has contributed to her steady growth in GDP.

According to sector analysis, the contributions to GDP growth show that structural transformation is weak in the West African region compared to other sub-regions in Sub-Saharan Africa. The service sector is the dominant sector in the region, with tourism being the major contributor to GDP growth in Cape Verde, while financial services contribute majorly to the service sector in Nigeria and Ghana. The service sector accounted for more than half of five West African countries' GDP in 2018 and beyond. Next to the service sector is the agricultural sector, accounting for 40 percent of GDP in four West African countries in 2018 and beyond. The industry sector contributions to GDP ranges from 11 percent in Liberia, and 23 percent in Guinea, Cote d'Ivoire, and Ghana.

The GDP per capita and the growth of GDP and in the West African region has witnessed some setbacks over the years. Notable among the recent challenges that metamorphosed a decline in GDP growth rate is the Ebola outbreak that affected Liberia and Sierra Leona in 2014-2016. The outbreak affected some neighboring countries in the West African region at that time and caused a contraction of many economies. The Boko Haram insurgence in Nigeria and insecurity challenges in most parts of the region also contribute to the lopsided/contraction of the economies in the region.

However, the region's real GDP growth rate is still below the East and Northern parts of the Sub-Saharan African region. The growth rate is projected by the African development bank (2018) to remain at 3.6 percent between 2019 and 2020. The average GDP per capita and GDP per capita growth rates of West African countries are indicated in Figures 2.2 and 2.3, respectively.

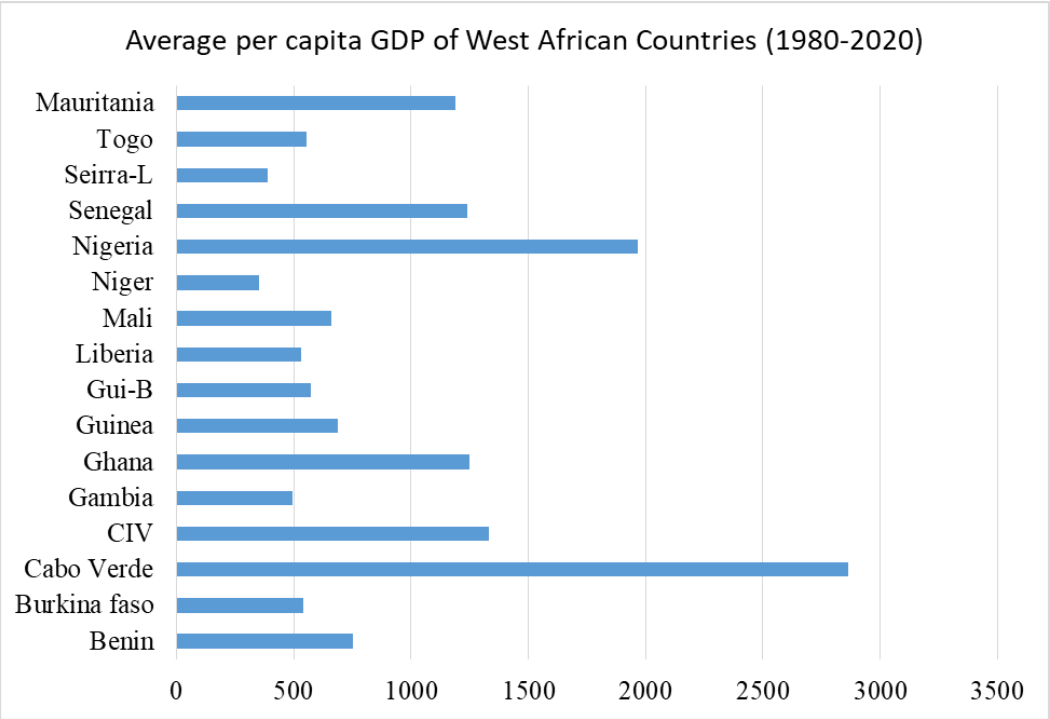

Figure 2.2 Average per Capita GDP of West African Countries (1980-2020)

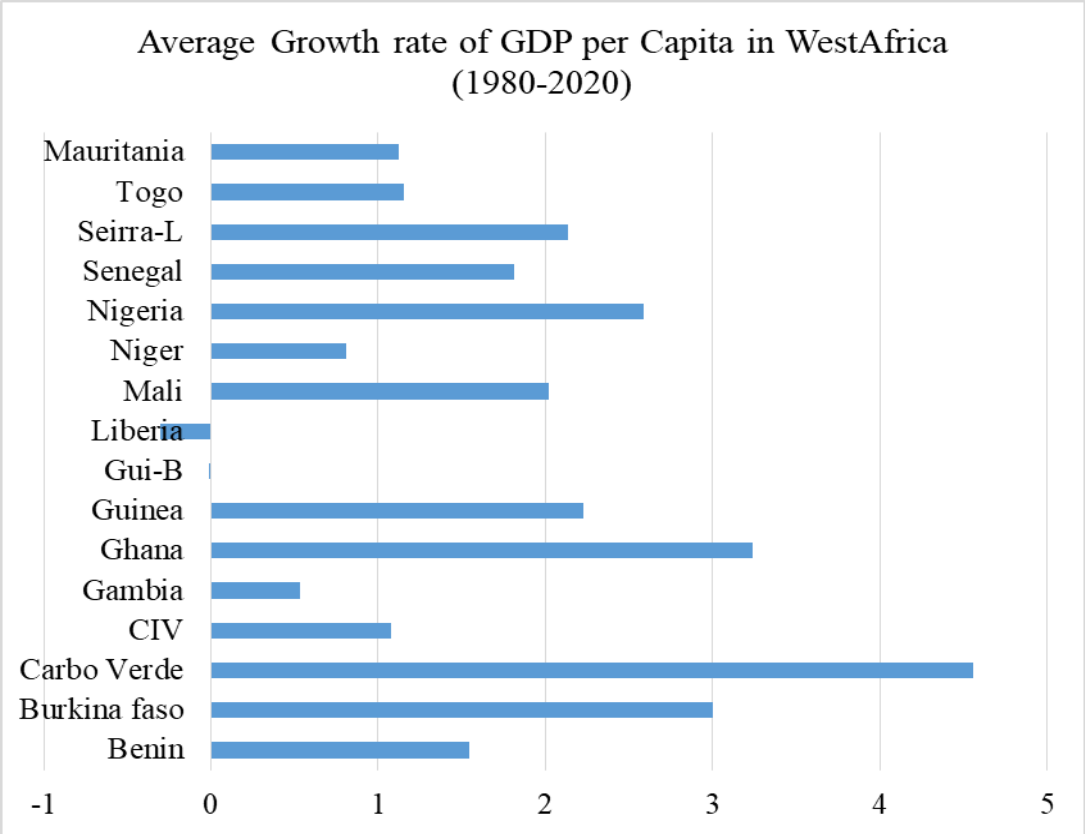

Figure 2.3 Average Growth rate of GDP per capita in West Africa (1980-2020)

2.2.3 Financial Development in West Africa

2.2.3(a) Credit to Private Sector and Broad Money Supply

Intra-regional financial integration is expected to reduce the cost of asset trading and offer more portfolio diversification opportunities in a region (Maria, You & Chen, 2019). The overall financial system in the West African region is still less than in some developed regions like Asia, Europe, and the likes. The region has introduced certain policies and reforms over the years to boost financial development and integration within the region. Some of the policies include money market development policy, removal of credit ceiling, the establishment of West African Capital Market Integration Council (WACMIC), privatization of government-owned banks. Despite all these policies, there is still high inequality within the region. The region's financial development indicators remain low compared to most regions, and there is a high-risk investment. In fact, the financial market system of the region is still characterized by poor market structure.

In order to restore customers' confidence in the banking sector and improve credit risk assessment and transparency, most countries in the West African region embarked upon a bank recapitalization program. Figures 2.4 and 2.5 display financial market statistics such as broad money as a percentage of GDP and private sector credit as a percentage of GDP.

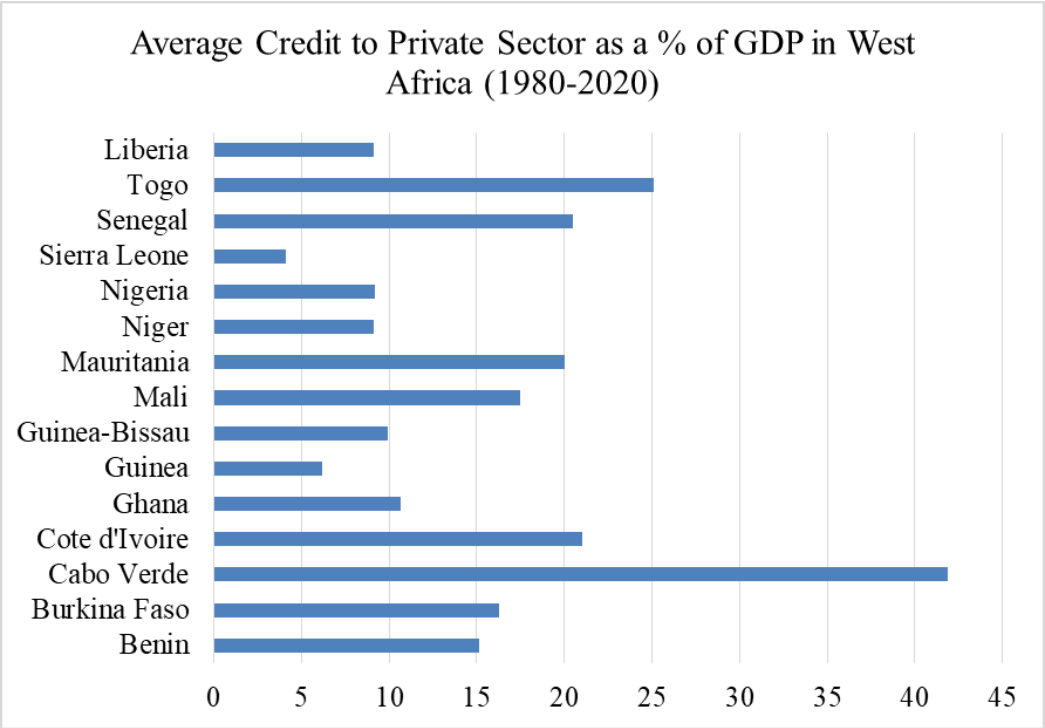

Figure 2.4 Average Credit to Private Sector as a Percentage of GDP in West Africa (1980-2020)

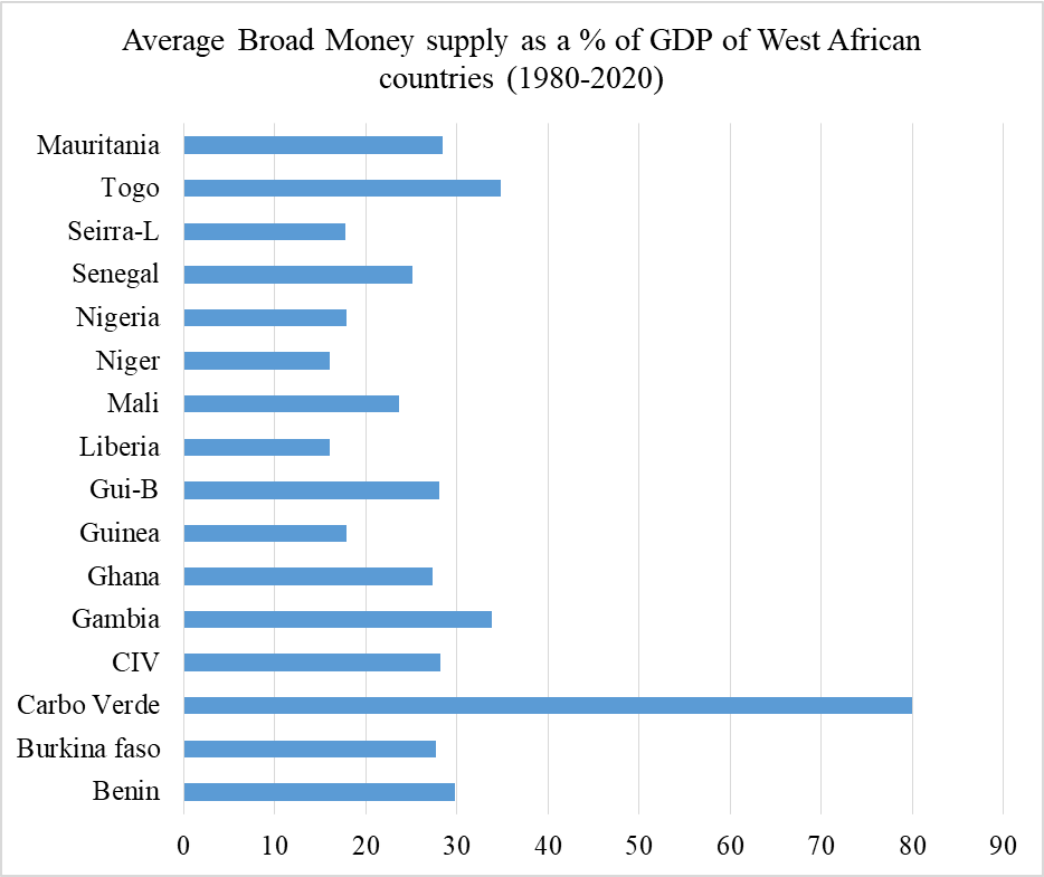

Figure 2.5 Average Broad Money supply as a percentage of GDP of West African Countries (1980-2020)

2.2.3(b) Financial Market Depth in West Africa

Figure 2.6 shows the financial market depth index, which represents the stock market size, its activity, and the financial and non-financial corporations' international and domestic debt securities. The information in figure 1.7 shows that the financial market depth of West African countries is increasing over the years. Ivory Coast and Sierra Leone, Guinea Bissau, and Liberia recorded the lowest index in the year 1996, while other countries recorded above 0.4 in that particular year. All countries in the West African region witnessed a positive and upward trend in the financial market development index, but the region is still considered developing in the overall financial development. This is so because Ghana stock and Nigeria's stock exchange markets dominate the entire West African stock market.